

UPPER FEATHER RIVER WATERSHED



Macroinvertebrate Monitoring
(2006, 2007, 2008)

BACKGROUND INFORMATION

- Increasing use of aquatic invertebrates (mostly insects) to evaluate water quality conditions
- State moving towards 'biological standards'
- Invertebrate community influenced by water quality, water quantity, and habitat factors



- 2006 & 2007: sampled 18 sites above and below agricultural valley areas (Sierra, Indian, American, Goodrich).



- 2008 sampled only at valley outlet sites.

- Sample analysis by DFG lab in Chico. Reported on 142 different metrics. We used 5 for a summary analysis.

- Principal comparisons:

- above and below valley differences
- before and after irrigation season differences



SIERRA VALLEY 2007

	TAXA RICHNESS		DIVERSITY		% EPT		% TOLERANT		% INTOLERANT	
	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall
SITES										
Turner Cr	34	33	2.47	2.16	51	46	9	7	38	28
Cold Cr	14	20	2.11	1.68	86	39	0	8	60	29
Perry Cr	6	32	1.63	2.08	33	20	13	10	13	27
Smithneck Cr	31	32	2.28	2.35	39	42	2	4	25	29
Little Last Chance Cr	11	19	1.68	1.77	59	28	10	10	29	24
	(19)	(27) ¹	(2.03)	(2.01)	(54)	35)	(7)	(8)	(33)	(27)
Main Fork Feather @ A23	20	21	1.83	2.56	22	16	30	36	3	0

1. Five Station Ave. for 'Above the Valley' sites

GENERAL OBSERVATIONS

- For % EPT, % Tolerant and % Intolerant, strong decline in metrics quality at below valley sites compared to above
- For taxa richness and diversity, not much difference in above and below sites
- At below valley site, little difference between pre and post irrigation season samples



2 YEAR SUMMARY

	TAXA RICHNESS	DIVERSITY	% EPT	% TOLERANT	% INTOLERANT
SITES					
SIERRA VALLEY					
Above	22	1.97	52	8	33
Below	19	2.01	39	24	3
INDIAN VALLEY					
Above	25	2.34	57	8	27
Below	17	2.09	32	25	9
AMERICAN VALLEY					
Above	34	2.52	54	9	35
Below	27	2.38	37	12	20
GOODRICH CREEK					
Above	34	2.74	51	13	39
Below	26	2.42	56	9	25

2 YEAR SUMMARY

- For **Taxa Richness and Diversity**, modest decline in metric quality when comparing above and below valley sites
- **% EPT, % Tolerant, and % Intolerant** showed a stronger & more consistent signal of decline in quality when comparing above & below valley sites
- With some exceptions, little difference between pre and post irrigation season results

- **% Intolerant Taxa** the most consistent metric in showing decline in quality from above valley to below valley sites
- Lots of variability, but with enough averaging there was surprising consistency between the four valley results

